

CACTUS AND SUCCULENT JOURNAL

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No. 11



Rose-colored *Epiphyllum*. Courtesy H. M. Wegener.
This group of plants is one of the finest for culture in
all parts of the U. S.



CACTUS AND SUCCULENT JOURNAL

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Eighth Annual Cactus Show

All omens are bright for our Eighth Annual Cactus and Succulent Show to be held May 14, 15, 16 and 17, in Paul Howard's "Flowerland" at Third & La Brea, Los Angeles. The show will open to the public at 2 p. m. on the first day after judging; thereafter from 10 a. m. to 10 p. m. Two big tents are being set up and these together with outside space and a rustic arbor will give us more room than ever before.

On entering, visitors will be confronted with a splendid panorama of large landscaped exhibits. The adjoining tent will house the smaller table exhibits. The rustic arbor will be filled with flowering Epiphyllums and shade loving plants. One of Los Angeles' fine landscape architects is planning the display.

Through the generous cooperation of Vice-presidents William Hertich and Howard O. Bullard a large bronze plaque, measuring 11 by 14 inches, has been donated to be known as the "Challenge Trophy." It is an original design by Grace Clements, a nationally known artist and sculptor. A noteworthy addition to the prize list, it will be given for a special collection display of specimen plants, the details of which are shown in the schedule of the show. If schedules are desired by any member or friend before the show drop a card to our energetic and capable manager, Mr. Lovell Swisher, 7218 Hillside, Los Angeles. He also has a supply of splendid posters to be sent to all who will use them.

The entry list has been enlarged to accommodate several new classes. No entry fee will be charged exhibitors, one ticket of admission being good for the duration of the show.

Those who have followed the last few shows of the Society, realize how each has been an improvement over its predecessor. The Show Committee plans for 1936 surpass anything thus far achieved. We solicit your aid in helping push this exhibit over the top with entries, donations for prizes and spreading the news to your friends. The committee will be glad to send personal notices of the show to anybody interested. Send in a list of names of your friends who would not otherwise see this notice and we will notify them of this Blue Ribbon event of the cactus lovers.

JOINT MEETING AT RIVERSIDE, CALIF.

A large number of members from Los Angeles and vicinity were guests of the Riverside Cactus Club in a tour of gardens in the Riverside district on Sunday, April 19th, under the leadership of Dr. Weber of the Citrus Experiment Station. Six gardens were visited, all interesting, but that of Mr. Satterfield, because of the splendid condition and rarity of plants and artistic landscaping was voted outstanding.

At the picnic lunch in the Citrus Experiment Station grove, officers and prominent members of both clubs were introduced. President Gates presided. Dr. Weber announced that because of his interest and that of his associates that they intended to devote considerable attention to the morphology and ecology of cacti; the work will be under the direction of Dr. Caryl and will surely result in findings of great interest.

Journal readers may look forward to a contribution from Dr. Weber in the near future.

Several expressed their appreciation of the Illustrated Glossary now being published in the Journal. Gustav Starck of Scottsdale, Ariz., who attended the pilgrimage was one of the first to correspond with Mr. W. T. Marshall explaining the need of a work of this kind.



One of the outstanding exhibits at the Seventh Annual Cactus Show. This unique display of Carl Brassfield's consists of plants of the *Opuntia* family. The varied forms attracted much attention and the arrangement was most valuable for the student. The interest in *Opuntias* has greatly increased since the *JOURNAL* completed Vol. I of Britton and Rose; this volume included all of the *Opuntias*.

The Hasty Naming of New Species

Variations of *Neomammillaria microcarpa*

By WRIGHT PIERCE

The desire to rush into print by naming new species by some amateur scientists has cluttered up our literature with many cactus names that really have no standing and which, with more careful study will without doubt be discarded. However, these names will always be a bother and certainly will reflect no credit to their authors. We should be cautious and before naming a new species, or even a variety, we should be certain that it is a valid one that will stand the test of time and study. If the plant is new and undescribed, it certainly deserves a name, and I do not wish you to construe my remarks to mean that I do not believe in any of the new names proposed, for I do think that many of them are justified. Many of us are amateur botanists, and it seems that the greater part of the recent work on cacti has been accomplished by such, so we must expect a certain amount of stumbling in the development, and I am only offering this suggestion with a feeling of friendliness and helpfulness, and I hope that all will accept it in this spirit.

It was during December, 1933, that a collecting trip was made into Arizona by the writer, accompanied by Dr. G. R. Price* of Monrovia. The main purpose of the expedition was to see if we could figure out the reason for the seemingly endless types of varieties of *Neomammillaria microcarpa*. Were these new species or merely varieties of *N. microcarpa*? This is the plant that has been called and is still being called *Neomammillaria grabami* by many, and even *N. goodridgei* by others. The name, *N. grabami*, had standing before it was changed by Britton and Rose, but since I am accepting them as authorities, the Arizona plant must be called *N. microcarpa*. *N. goodridgei* has no standing as a native of Arizona, for it is a plant named from the Cedros Island, and is a native there and on the coast of Lower California, some three hundred miles south of San Diego, California, but we find plants coming from Arizona, California, and even Texas, carrying the name *Neomammillaria goodridgei*. Even though it is quite possible that *N. goodridgei* is only slightly different from *N. dioica*, both are certainly far

different from *N. microcarpa*, and I would most certainly hesitate to call any *Neomammillaria* from near San Diego, which is near the type locality of *N. dioica* anything but that, yet I often see in print the name *goodridgei* given to plants from San Diego County, California.

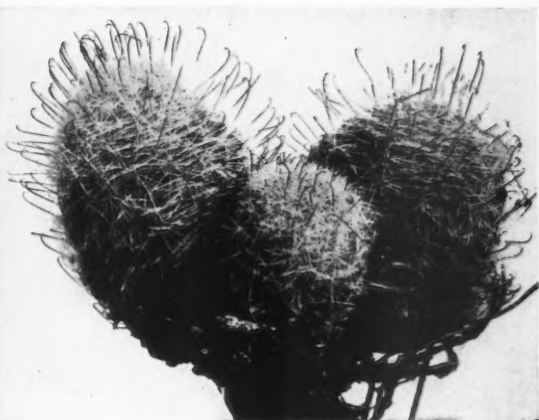
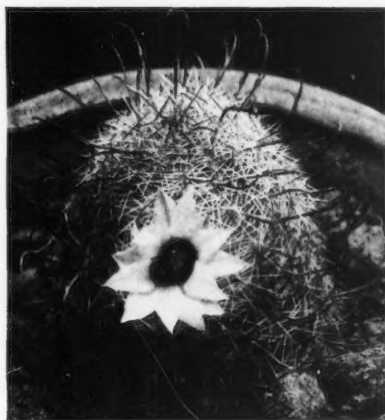
On this unhurried Arizona trip of nearly two weeks, we collected specimens of the supposed *N. microcarpa* from twenty different stations. These localities started from near Quartzsite, which is a few miles east of Blythe on the Arizona side of the Colorado River, and followed along the main highway from there to Wickenburg, Phoenix, Roosevelt Lake, Superior, south of Superior for about forty-five miles, through the mountains toward Tucson, and from this point along the main road to Tucson. From there, we worked east to Vail, then back to Tucson, and then to Sells and on to Gunsight, then down to near Sonita on the U. S. Mexican border, back to Ajo and Gila Bend and Phoenix and then north from there to Wickenburg and Prescott; then over to U. S. Highway No. 66, which we followed back into California at Needles.

It is interesting to note that we found our wanted *Neomammillaria* at nearly every stop until we reached the base of the mountains south of Prescott, where we made our last collection. From this point on into California, even though we made numerous stops, we were unable to find a single specimen of the desired species. Along the whole trip we took numerous side trips into likely looking territory. Even though we have made several excursions during the last few years into the territory in California directly west of the Colorado River, we have never as yet located a single specimen of *N. microcarpa* there though this species has been reported a number of times from California. It seems strange that this plant is apparently wanting from a section which seems so ecologically favorable for it and so near to its range, but it appears that the Colorado River marks the western boundary of this species.

After these plants were gathered and placed together, it certainly looked as if we had found several different species, however, careful study of the seed* of these various looking plants re-

*Here I wish to express my thanks for the willing and careful help of Dr. G. R. Price—a most amiable companion and grand fellow who helped make this trip a success.

*My thanks are due to Miss Lois Chambers for her help with these seeds.



Neomammillaria microcarpa from Britton and Rose, Vol. IV

vealed no difference. Also, we found plants with heavy central spines along the whole route intermixed with plants with slender centrals.

We collected at or near the type locality of *N. milleri*, and while this may be a valid species, I rather doubt if it is more than a variety, of *N. microcarpa*, and perhaps not even that!

On our plants we found the color of the central spines varying from a clear light yellow to ebony black. We also found that on different plants the number of central spines varied, but we could get no regularity in this according to location or groups of plants. The colors of the central spines could not be co-ordinated with light conditions, as we found some plants with very dark spines well hidden by bushes and others with the same dark colored spines out in the full sunlight. Or again, those that had the lighter colored spines would be in either location. Oftentimes, we would see a large old plant with dark spines, surrounded by a number of younger ones, seemingly the offspring of the larger plant, and these had lighter or perhaps even darker colored spines than the supposed parent. The central spines varied in length as well as in color and size.

In some localities most of the plants were comparatively huge for *Neomammillarias*, while in other sections few were branched. Is it any wonder that our minds were in a whirl after seeing all this?

However, we attribute all these variations to soil and moisture conditions which change so startlingly while going even short distances, and also to the apparent natural variations in this species. It was interesting to note that in some localities these plants seemed to prefer to grow out in the open, they seemed to thrive there, while

in other localities, the plants were nearly all hidden under bushes or shrubs or other large cacti where they too seemed to be doing well. We could not coordinate this with light conditions, as the light seemed to be practically the same for the whole district that we explored excepting for the different slopes. Nor did there seem to be any general rule that would hold here, so probably there is some other hidden factor that accounts for these variations which we did not discover. The problem goes on and on—

N. microcarpa is not dioecious, and this species is very different from the light colored blossom of *N. dioica*, for it is of a beautiful pink color, and the seed pods as well as the seeds are smaller, and we found that the blossoms, seeds, and fruit from the plants that we collected were identical, with the exception of a slight color variation in the blossoms which can be overlooked as not particularly important.

As stated before, when these plants were collected it seemed to us that we had several varieties, but after they had been held for 18 months in the same soil, with exactly the same light conditions and given identical amounts of moisture, nearly all these differences disappeared, and anyone then would have said that these plants were all of the same species.

So, friends, do not be too anxious to name a new species, remember that plants of the same species in their native state are apt to appear quite different in different localities. This is either due to different soil conditions varying amounts of water or light, or natural variation. This variation may be quite startling, especially with some of the more recent forms of plant life

such as cacti, many of which even now seem to be still developing into more stable forms than we now know them.

NOTE: I have just read with interest the remarks of Dr. R. W. Poindexter and E. C. Hummell in the

March, 1936, Journal of the Cactus and Succulent Society of America, Inc., in regard to the naming of new species, and I feel gratified that they both appear to agree with my ideas as to the naming of new species. So, again may I say, go cautiously and be sure so that you will have no regrets later on.

Collecting Succulents in Mexico

By ERIC WALTHER

PART II.

Long before the writer ever dreamed of going to Mexico personally, he had been puzzled by the apparent unduly close proximity of various *Echeveria* species in the range of Mountains just south of Mexico City. We found it hard to believe that every few miles along the railroad to Cuernavaca, another separate species of *Echeveria* should be able to maintain itself distinct and unadulterated. Within a radius of less than 25 miles more than 12 species of *Echeveria* are known to occur, and the problem of just how this crowding became possible without intermixture, was a most intriguing one. In 1934 we had made an attempt to solve the puzzle, succeeding only in part owing to lack of time, so that one of our aims for 1935 was a further investigation of this region. On our very last excursion in 1934, when returning from El Parque in Morelos, from where we had finally located *E. fimbriata*, we had been exasperated by the view from our window on the rushing train, of literally thousands of *Echeverias* in full flower. Covering an open lava-flow, in company with several *Agaves*, *Bromeliads*, etc., the *Echeveria* in question was one of the tall species of our Series *Gibbiflorae*; and our inability to stop the train and grab a few specimens was most aggravating. However, one of the first excursions planned for 1935 took us to this locality. Debarking at El Parque from the only daily train, we had less than three hours available for the hike over the ties to Kilometer 86 and return. On arriving at the old lava-field, we had our suspicion confirmed that here was the true *E. gibbiflora* of DeCandolle. (See photo Nos. 8 and 10., both taken in the field at Kilo. 86).

This was the same *Echeveria* we had seen growing last season on the ruined church at San Juanica Tlacotenco, near El Parque; and any doubts we had entertained then as to this being truly native here were now resolved. One might reasonably have expected that a species, originally found over 100 years ago, could not have been so relatively inaccessible, but that apparent difficulty disappeared when we found remains of the old "Camino," now abandoned for the

shorter, if steeper, route of the modern, asphalt-paved auto-highway.

While the plants were extremely plentiful, getting a fair photograph was by no means simple, since the terrain was most uneven and rocky, with deep clefts between the boulders of lava; and a dense mass of spiny-leaved *Bromeliads* (*Hechtia* spp.) protected the *Echeveria* from botanists and goats alike. From our photo No. 8 may be seen how closely the *Echeveria* seeks the shelter of its spinose neighbor.

With the close systematic affinity of *E. gibbiflora* to *E. grandifolia* goes also a geographical proximity, since a form of the last was found by us the previous season in the woods near Santa Maria, (see our picture, Vol. 6, 10, CACTUS AND SUCCULENT JOURNAL, April, 1935), less than 10 miles distant from here as the "Zepilotes" fly. Our field-studies revealed considerable variation in *E. gibbiflora*, even in this one location at Kilo. 86, both in leaf-shape and color; and while most individuals had decidedly suborbicular leaves with broadly rounded apices, a few had relatively narrower, more pointed leaves. Some plants were colored sufficiently dark to pass as *E. metallica*, but the majority were fairly pallid; while a number had leaves distinctly frilled. A good deal of further study and consideration will be needed before we shall be able to crystallize our views into formal expression.

At this particular spot the vegetation was rather scant, possible due to a recent forest-fire of which there was some evidence. Further along the track fairly dense woods existed, of oak, *Garrya longifolia*, etc., sheltering an exuberant mass of flowering shrubs, herbs, annuals, etc. Returning to El Parque in time for the train home, we there noted an interesting sidelight on the local climate, furnished by the numerous donkey-trains unloading their burdens for transshipment by express-freight to the Mexico City markets; most of their baskets holding fruits, such as *Cerberimoya*, *Spondias lutea*, etc., all signs of a frostfree locality. Actually, El Parque lies as high as Mexico City, but its southern exposure, backed by the sheltering Sierra to the north,



7. Loading Hog-plums for Mexico City at El Parque. 8. *E. gibbiflora* flowering at Kilo 86. 9. Flowering branch of *E. gibbiflora*. 10. Leaves of *E. gibbiflora* in its native habitat. 11. *E. glauca* in woods above Lakes of Zempoala. 12. One of the Zempoala Lakes near Huitzilac.

makes frost a rare occurrence there.

A part of this higher Sierra are the triple peaks of "Tres Cumbres," formerly known as "Tres Marias," being the type-locality of *Echeveria scopulorum* Rose. The very closely related *E. obtusifolia* of Rose also comes from this part of Mexico; and on a later occasion we hunted for this under the aegis of our friend Sr. Halbinger. Last year we had obtained a plant, supposed to have come from near the Lakes of Zempoala, apparently identical with *E. obtusifolia*. A new auto road having just been dedicated, our last day in Mexico this last season was spent in an attempt to find the natural habitat of this species. The lakes in question lie at an altitude of more than 9,000 feet; and at this time of year, the last week of November, early morning frequently finds the ground frozen for an inch or so. The picturesque scenery served to compensate us for our failure to find the *Echeveria* sought; but we did find *E. glauca*, in fairly dense shade in the pine-woods above the lakes. Later, when returning, we spotted *E. obtusifolia* on an old wall in the village of Huitzilac; and bought enough for our purpose. This was said to occur in the barranca below the village, towards Cuernavaca. Fumigation with carbon-tetrachloride killed all our plants but a single one, now thriving in Golden Gate Park in San Francisco. There is little doubt that *E. scopulorum* and *E. obtusifolia* are most closely related; and in turn, are probably mere forms of the variable *E. fulgens*, or *E. retusa*, as it is better known.

(To be continued)

NEW LISTS

South West Africa Succulent Nurseries, Wilhelm Triebner, Windhoek, S. W. A. 48 page list of plants and seeds. One of the most complete listings of South Africa Succulents. Send 35c to the CACTUS JOURNAL and a quantity of lists will be ordered at one time.

Curt Backeberg's KAKTEEN INDEX 1936, Volksdorf Bez. Hamburg, Im Sorenfelde 15, Germany. 60 page list of seeds and plants heretofore never illustrated. Although in German, this booklet is invaluable to every collector. You may send 40c direct to the CACTUS JOURNAL, 6162 N. Figueroa St., Los Angeles, Calif.

Howard E. Gates, 119 S. Illinois St., Anaheim, Calif. A 24-page list of cactus and other succulents. Illustrated. This booklet contains more Mexican species from Lower California than any other known list. Mr. Gates has noted under the various genera whether or not the plants are free flowering and other helpful information. An unavoidable delay in the publication of this catalog has caused much annoyance to our conscientious President, but Mr. Gates wishes to inform those who have requested the catalogue that it will be in the mail soon.

REVISION DER SYSTEMATIK DER KAKTEEN published by Eric and Kreuzinger, Praha-Smichov 138, Czechoslovakia. 52 pages of a well printed and fully illustrated list of cacti arranged according to the evolution of the plants based upon the study of the seeds. Quoting from part of the English section: "The former classification of the cactaceae by Schumann was nearly exclusively based on the habitus of the plants. The classification by Britton and Rose was established partly according to the characteristics of the pericarp and the fruit, partly according to the colour of the flowers and to the blossoming-time. In some points, however, this classification, too, does not longer satisfy.

"Only by the microphotography of the seed of cacti— which method is developing into a sort of 'dactyloscopy of plants'—Dr. J. Greger, professor, and K. Kreuzinger managed to establish a certain internal relationship both of species and of genera and thus to correct many a fault of the systems hitherto in existence. But even if the cacti are classified according to the characteristics of the pericarp, a few exceptions seem to be left, e. g. *Rebutia* (*Eurebutia*), *Echino-Rebutia*, or *Harrisia*; for, if considered merely with regard to the pericarp (calycium), they seem to belong to quite different classes, whereas, when judging from their habitus, flesh of stem, flower, habit, and chemical reaction, we have no reason to regard them as exceptions nor have we any difficulty in classifying these plants

"The knowledge resulting from the dactyloscopy of seed is a welcome help to the classification of those apparent exceptions. So we learn that the present form and condition of the pericarp have been called forth by influences still unknown to us. As to *Harrisia*, the narrow relationship of the seeds can easily be discerned. Nevertheless, the characteristics of the pericarps vary so much, that other authors were induced to subdivide the genus of *Harrisia*.

"Without investigations of the above kind, any systematic classification, not only of cacti but of all plants, cannot but be defective and contradictory. The foundation of the dactyloscopy of seed being available, the kindred relations will, no doubt, at once become obvious to anybody. Then, the classification is based on a more solid ground and has passed a reliable control."

There is also included a reproduction of the "Cactus Tree" or a diagram showing how each genus fits into the evolutionary theory. See Mr. Fric's herbarium specimens at the Los Angeles Cactus Show:

"The great scholar A. V. Fric has succeeded in preparing the flowers of cacti so that they remain soft and supple and keep on showing distinctly all the details of botanical interest. Besides, the colours keep almost lifelike. Such herbariums, that—if necessary—also contain parts of ribs and areoles, or even complete longitudinal sections or cross-sections of the plant as well as seeds, samples, fruits, etc., are indispensable for the classification of the cacti."

The Editor has a few of these lists priced at 50c complete with 100 illustrations. Price-list included which keys-in with the booklet.

AGAVE MURPHEYI, a new species

By Frederick Gibson. Contributions from Boyce Thompson Institute, Vol. 7, No. 1, pp. 83-85, 1935. Boyce Thompson Institute for Plant Research, Inc., 1086 N. Broadway, Yonkers, N. Y.

The following 8 pages are from Vol. II of The Cactaceae, courtesy of Carnegie Institution.

Glossary of Succulent Terms

A glossary of botanical terms and pronouncing vocabulary of generic and specific names used in connection with xerophytic plants.

By WM. TAYLOR MARSHALL

Drawing by Georgia Banks and Margaret Kincher

PART II

albatus: (äl-bät'-üs) whitened. S.
albicaulis: (äl-bī-kāw'-līs) white stemmed. S.
albiflorus: (äl'-bī-flör'-üs) having a white flower. S.
albinotus: (äl'-bī-nō'-tūs) marked with white. S.
albipunctus: (äl'-bī-pünk'-tūs) white pointed or white tipped. S.
albisetosus: (äl'-bī-sē'-tōs-üs) with white bristles. S.
albispinus: (äl'-bī-spīn'-üs) with white spines. S.
album: (äl'-büm) white in color. S.
albumin: (äl-bū'-mīn) in plants—the protoids which readily coagulate from their liquids by the action of heat or acids.
alburnum: (äl-būr'-nüm) the sapwood of a tree.
alcicornis: (äl-sī-kör'-nīs) elk horned. S.
alensis: (ä-lēn'-sīs) coming from Sierra del Alo or Alamos. S.
alliaceous: (äl-ī-ä'-shūs) belonging to the genus *Allium*: garlic like; usually connoting odor.
Aloe: (äl'-ō) a genus of succulent plants of the family Liliaceae, tribe Aloineae.
aloides: (äl-ō-ī'-dēs) like an Aloe. S.
alpestris: (äl-pēs'-trīs) Alpine; from high mountains. S.
alpinus: (äl-pīn'-üs) Alpine; from high mountains. S.
alteolens: (äl'-tē-ō'-lēns) highly scented; of strong odor. S.



Alternate leaves

alternate: (äl-tür'-nāt) an arrangement of leaves placed singly, not oppositely nor in pairs; first one and then another.
alterniflorus: (äl-tēr'n'-ī-flör'-üs) alternate-flowered. S.
altissimus: (äl-tīs'-ī-mūs) very tall; tallest. S.
altus: (äl'-tūs) tall. S.
alutaceous: (ä-lū-tā'-shūs) light tan color; leathery in texture. S.
alveolate: (äl-vē'-ō-lāt) pitted like a honeycomb. S.
amabilis: (ä-mäb'-ī-līs) lovely. S.
amarus: (ä-mär'-üs) bitter. S.
Amaryllidaceae: (äm'-ä-ril-ī-dä'-cē-ē) a family of plants in the order Liliales; including the Agaves and other succulents.
ambiguous: (äm-big'-ū-üs) doubtful. S.
amblygonis: (äm-blī-gō'-nūs) blunt angled; obtuse angled. S.



Amplexicaulis leaves

ambyoden: (äm-bī-ō'-dēn) blunt-toothed. S.
americanus: (ä-mēr'-ī-kä'-nūs) American; native to America. S.
amethystinus: (äm'-ē-thīs-tīn'-ūs) violet-colored. S.
ammophylla: (äm'-mō-fil'-lā) sand lover. S.
amoenus: (ä-mō-ē'-nūs) pleasing. S.
amorphous: (ä-mör'-fūs) having no determined form; shapeless. S.
amphitropous: (äm-fī-trō'-pūs) half anatropous; said of ovules having a short raphe; the hilum about in the middle of one side of the ovule.

amplexicaulis: (ām'-plēx-ī-kāw'-līs) stem clasping.

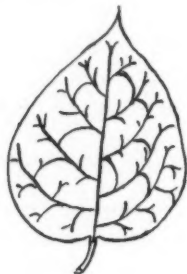
anabolic: (ān-āb'ōl-īc) of or pertaining to anabolism.

anabolism: (ān-āb'ō-līz'm) a phase of metabolism, or building processes of plants.

Anacampseros: (ān-ā-kāmp'-sē-rōs) a genus of succulent plants in the family Portulacaceae.

anacanthus: (ān-ā-kān'-thūs) without spines. S.

analogous: (ā-nāl'-ō-jūs) related in functions or use, but not in origin.



Anastomosis in a leaf

anastomosis: (ā-nās'-tō-mō'-sīs) the union of veins so as to form a network, as in leaves.

anatropous: (ā-nāt'rō-pūs) upturned or inverted, said especially of ovules.

ancad: (āns'-ād) a canyon plant. S.

anceps: (ān'-cēps) two-edged; two-headed. S.

ancipital: (ān-cī'-pī-tāl) having two edges or two heads.

Ancistrocactus: (ān-sīs'-trō-kāk'-tūs) literally "fish-hooked cactus;" a genus of cactus from Texas and Mexico.

Ancistrocanthi: (ān-sīs'-trō-kān-thī) a series in the Schumannic classification of *Cereus* to which he referred *Austrocactus*.

ancistrophora: (ān-sīs'-trō-fōr'-ā) carrying hooks. S.

ander: (ān-dēr) male; used in combinations, as monandrous (having one stamen).

andicola: (ān'-dē-kō'-lā) living in the mountains. S.

andro-dioecious: (ān'-drō-dī-ē'-shūs) with staminate flowers on one individual and perfect flowers on another.

androeceum: (ān'-drō-ē'-sī-ūm) the male or stamen bearing part of a flower; the stamens collectively.

androgynous: (ān'-drōj'-ī-nūs) male and female flowers in the same spike but the male

flowers uppermost, so that only the lower part of the spike bears fruit.

andro-monoecious: (ān'-drō-mō-nē'-shūs) with staminate and perfect flowers on the same individual.

androphore: (ān'-drō-fōr) the column formed by nonadelphous (united) filaments.

anfractuosis: (ān-frakt'-ū-ō-sīs) winding. S.

angiosperms: (ān-jī'-ō-spūrms) plants that bear the seed within a pericarp, in distinction to the gymnosperms which have naked ovules and seeds; having a closed ovary.

anguiniformis: (ān-gwīn'-ī-fōrm'-ūs) formed like a snake. S.

anguinus: (ān-gwīn'-ūs) like a snake. S.

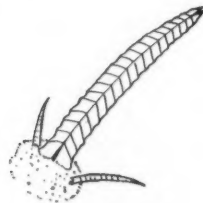
angularis: (ān-gū-lar'-īs) angular; angled. S.

angustus: (ān-güst'-ūs) narrow. S.

Anhalonium: (ān-hāl'-ōn-ī-ūm) Lemaire's name for the genus of cacti now known as *Lophophora*, B. and R.

anisocanthus: (ān-īs'ō-kān'-thūs) with unequal spines. S.

annual: (ān'-ū-āl) a plant that survives one year or season.



Annular spine

annular: (ān'-ū-lār) having the form of a ring; said of spines and roots with ridges encircling them.

annulate: (n'-ū-lāt) same as annular.

anomalous: (ā-nōm'-ā-lūs) varying from the general rule; abnormal; irregular.

anterior: (ān-tē'-rī-ēr) the side in front; in an axillary flower, the side facing away from the stem.



Anthers

anther: (ān'-thēr) the sac containing the pollen; the essential part of a stamen. (See drawing flower).

EDITORIAL

The enjoyment that one obtains from working with cacti and the other succulents depends entirely upon the expended effort and study. One gains little from mere collecting without the knowledge of the plants; the names, the type locality, the propagation and characteristics all tend to make plants more interesting.

There are many study groups throughout the country and many are taking advantage of the services rendered to the Affiliated Groups of the Cactus and Succulent Society of America, Inc. The ever increasing literature is a most valuable aid and will keep alive this interesting study.

In order that you may take a more active part in the work of the Society and the CACTUS JOURNAL, we are suggesting several ways that you may help other members; you will also have the satisfaction of feeling a part of the world-wide renewed interest in succulents.*

There are requests from all parts of the United States for information on the growing of plants in their locality. We are promised material from Texas and are most anxious to hear from New York state, Massachusetts, New Jersey, Wisconsin, the Pacific North West—in fact, from all localities which present special problems. How do you grow your plants? How do you winter them? What kind of soil? How much do you water them? What pest difficulties do you encounter? Do you propagate by cuttings or seeds? What species are adapted to your locality and which fail to thrive? Which species can you flower? These and many more questions are the ones that others in your state are asking. Won't you answer these questions now and help others in this fascinating study?

The following questions have been sent in by members. Will someone please answer through these columns?

- (a) I have several cactus plants that are slowly being infested with some kind of a parasite. In spots the plant is covered with a small white scale, shaped like a clam shell and underneath there is a tiny oval shaped bug. It looks as though cotton was on the plant.—*Mass.*
- (b) Has creosote-treated seed-flats or plant-stakes any ill effects on seedlings? Is oak-wood ashes beneficial when mixed with soil for cactus plants and what proportion is advisable or use with a quart of water?—*Ill.*
- (c) We are located at a high altitude by the shaft of a mine. Our first difficulty was when a chip-monk ate most of our Sedums—in fact, everything that did not have spines. Our plants are always kept indoors and we would like to know how to remove and prevent scale. One cactus is covered with brown patches which looks dried; this begins at the base and works upward; it does not look like a bug or scale. One Euphorbia is turning gray at the base; is that a natural condition with some of the species? If plants get covered with snow or are "frost nipped," is there any way to save them? The Glossary of Succulent Terms is exactly what I have wished for and I would not have missed this for anything.—*Shaft No. 1, Bishop, Calif.*
- (d) What causes my cacti to split open during the rainy season? Can it be avoided since it spoils the appearance of the plant? *Tonya Hokin, L. A.*

*Unless otherwise stated, the general use of the word "succulents" includes cacti.

For the best 2000 word article on "Cacti and Other Succulents," we are offering a life membership. The purpose of this article is to tell why the growing of succulents is so interesting and how to maintain that interest. The article must tell how to start collecting and how to proceed; the care of plants and the pitfalls to be avoided. Photographs may be used to strengthen the appeal. No award will be made unless meritorious.

Readers of the JOURNAL are warned not to accept too quickly the many new changes in cactus nomenclature. In some of the more recent listings of cacti, the authors themselves are correcting many of the changes that they had recommended. The many new genera and hundreds of species should stand the test of time before they are accepted. Too many errors have been made in the past by rushing to print. This year we look forward to an international agreement on cactus nomenclature, but until that time you are advised to abide by Britton and Rose, which, although not entirely faultless, it has been most valuable in standardizing the names of cacti. See the July issue for an outline of the plan of procedure.

SCOTT HASELTON.

THE BLAKSLEY GARDEN

Santa Barbara, Calif.

At the annual meeting of the Trustees on February 10, Dr. and Mrs. Elmer J. Bissell tendered their resignation as Directors of the Blaksley Botanic Garden. In accepting this resignation the Trustees adopted a special minute expressing their appreciation of the service Dr. and Mrs. Bissell have performed in developing a wild canyon into a distinctive botanic garden.

The Garden was established in memory of Henry Blaksley (1816-1885) by his daughter, the late Mrs. Anna Blaksley Bliss, who purchased the first tract of fifteen acres of land in 1926 and created a trust fund for its benefit in 1927.

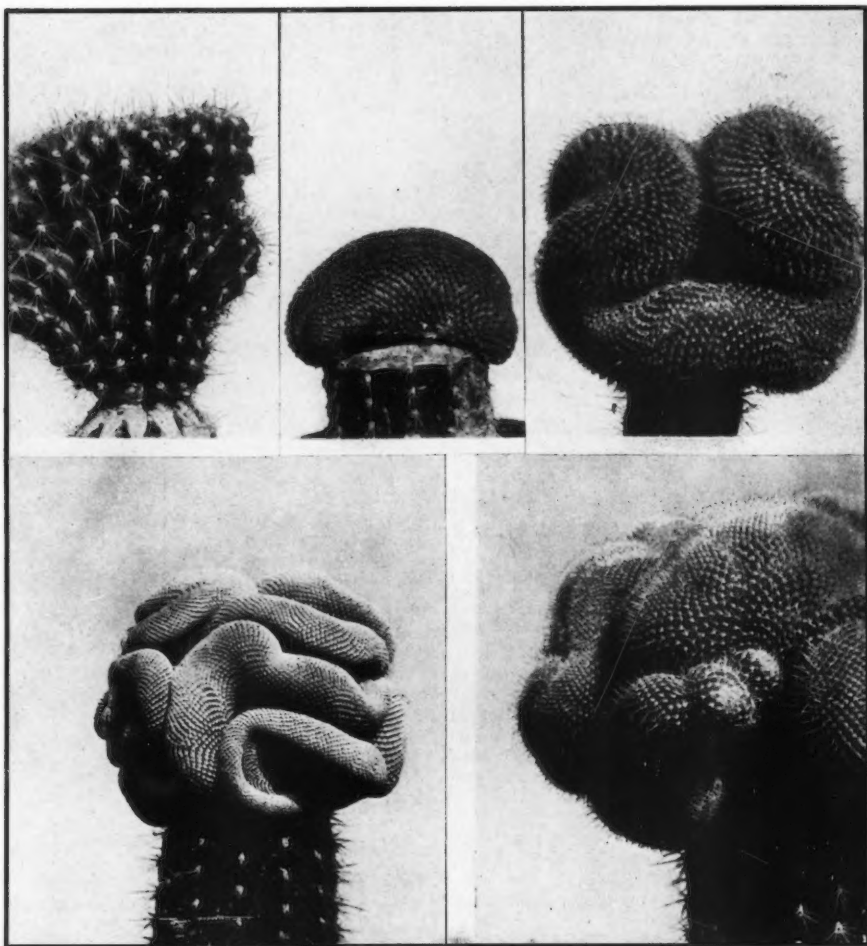
The Carnegie Institution, interested in the research possibilities of the Garden in cultivation of native plants, suggested that the title and management be vested in the Santa Barbara Museum of Natural History. This suggestion was adopted and the administration of the Garden was intrusted to Dr. Bissell.

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ADDRESS: CACTUS JOURNAL



A group of crests in the collection of Howard O. Bullard, Hackensack, N. J. TOP ROW: *Cephalocereus nobilis*, *malocarpus submammullosus*, *Hickenia microsperma*. LOWER ROW: *Solisia pectinata*, *Neomammillaria geminispina* var. *nivea*. EDITOR'S NOTE: A large collection of crest pictures is needed. Mail a picture of your favorite crest.

Photo by Haselton

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CACTUS AND SUCCULENT SOCIETY

I only wish I were capable of expressing my appreciation of the Journal in some adequate manner. You may perhaps realize my enthusiasm for Cacti and admiration of the Journal when I say that I found myself looking forward to the January, 1936, issue with about the same anticipation which preludes Spring, Christmas, and the other major joys of living. Needless to say, I intend to extend my subscription as long as I find it possible. R. O., Warsaw, Indiana.

ECHINOCEREUS ANGUSTICEPS, A NEW SPECIES FROM THE LOWER RIO GRANDE VALLEY, TEXAS

ELZDA U. CLOVER

According to Britton and Rose, *Echinocereus papillosus*. A. Lke. occurs in western Texas and supposedly also in the vicinity of San Antonio. For several years it has been known in the Lower Rio Grande Valley, Texas. The first collection, which was made by the author, was in 1926, when two specimens were found five miles north of Loma de la Cruz, near Rio Grande City, Starr Co., Texas. Recent collections (Clover 15255 and 548) have been made ten miles west of Edinburg, Hidalgo Co., Texas, where the plant is abundant in an area at least a mile square.

This range was extended during the course of mapping Starr County. Many specimens were found near Rucio, a ranch home about fourteen miles north of Rio Grande City, and from here the plants were numerous in the brush along the Hebbroville road southward for ten miles.

The soil here is light sandy loam with some red gravel and limestone on low hills. *Echinocereus papillosus* is found growing under the shelter of shrubs or large opuntias. These low hills are covered with typical chaparral in which *Acacia amentacea*, *Acacia Berlandieri* and *Leucophyllum texanum* predominate. *Prosopis juliflora* (the mesquite), *Condalia obovata* and *Bumelia angustifolia* are found in this association. Other cacti occurring with *Echinocereus papillosus* are *Coryphantha Runyonii*, *Lophophora Williamsii*, *Ancistrocactus Scheeri* and *Neomammillaria hemisphaerica*.

Within the last few years a type somewhat resembling *E. papillosus* has been found in a limited area near Linn, seventeen miles north of Edinburg, Hidalgo County. It is called "The

small papillosus," by nurserymen in southern Texas. It seems to have been first discovered by Mrs. Troy Downs of Alamo, Texas.

The association in which it grows is quite different from that of the larger form, and the fact that the two never occur together has significance. The soil is light sandy loam to dark loam, and the vegetation consists of scattered mesquites and grass with *Zizyphus obtusifolia*, *Lippia ligustrina*, *Karwinskia Humboldtiana*, *Dolichothela sphaerica*, *Neomammillaria hemisphaerica*, *Hamatocactus setispinus* and *Jatropha spatulata*.

Although many of the species of this association are also found in the habitat of *Echinocereus papillosus*, the nature of the associations is not at all alike. The cactus near Linn grows in open places with less protection than the other form gets. It differs greatly in size and habit from its relative, as PLATE 327, FIG. 1 will show. Specimens under observation in the Michigan Botanical Gardens (nos. 547 and 548) has been given identical conditions for two years and still retain these characteristic differences. Environmental conditions in the field do not therefore appear to be responsible for the difference in habit and form.

Both species blossom during April and May in the greenhouse, probably earlier in the field, the flowers remaining open for two or three days.

According to reports of cactus growers *Echinocereus papillosus* is more difficult to grow than the other species, for the two appear to be specifically distinct. The chief characteristics of the two types compiled from notes on many specimens are shown below in parallel columns:

CHARACTERISTICS	ECHINOCEREUS PAPILLOSUS	ECHINOCEREUS ANGUSTICEPS
Number of stems in clump	one to nine	five to ninety-five
Diameter of largest clump	thirteen inches (nine stems)	twelve inches (ninety-five stems)
Length of stem	fifteen to seventeen cm.	four to eight cm.
Diameter of stem	five to seven cm.	two to three cm.
Number of ribs	eight to nine	seven to eight
Number of spines on rib	radial, eight to ten; central, one	radial, seven to nine; central, one
Flower color	sulfur-yellow segments; center, same nopal to brazil red	same
Width of flower	seven to nine cm.	seven to nine cm.
Length of flower	nine to nine and six-tenths cm.	eight and five-tenths to nine cm.
Series of perianth-segments	four	five
Shape of segments	oblong-spatulate, acuminate	oblong-spatulate to ovate
Apex of segment	long-apiculate	short-apiculate to blunt
Serration of segments	finely erose	deeply erose to entire
Color along middle trace of outer perianth-segment	deep hellebore red	purple-drab

Echinocereus angusticeps n. sp. (PLATE 327, FIGS. 1, right, and 2) caespitose, stems procumbent to ascending, several to many, 4-8 cm. long, 2-3 cm. in diameter, ribs 6-8, prominent, definitely tuberculate; radical spines 7-9, white to yellow, porrect, acicular, upper ones in each group smaller, about 4 mm. long; central spine solitary, brown, acicular, erect, 7-8 mm. long; flowers showy, delicately fragrant; perianth-segments in five rows, segments 3-4 cm. long, 1.5-2 cm. wide, sulfur-

yellow, nopal to brazil red at center, the outer ones purple-drab on the outside along the middle trace, oblong-spatulate to ovate, short-apiculate to blunt, erose; scales on ovary purple-drab to reddish, spines on ovary 4-13, longest 6 mm. long, white; width of flowers 7-9 cm., length of flower 8.5-9 cm., stamens cream-colored, shorter than the pistil, stigma-lobes 10-12; fruit greenish. Colors according to "Color Standards and Nomenclature," Ridgeway.

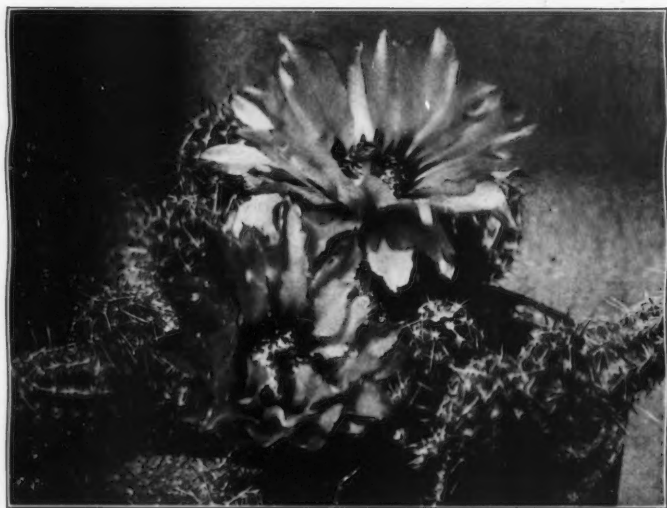


PLATE 327. FIG. 1. *Echinocereus papillosus* A. Lke. (Mich. Bot. Gard. No. 15255, left); *Echinocereus angusticeps* Clover (Mich. Bot. Gard. No. 15261, right) showing differences in size and habit. FIG. 2. *Echinocereus angusticeps* Clover (Mich. Bot. Gard. No. 15261).

The differences justify the recognition of a new species, since there should be a definite name for a plant which is known by all local cactus enthusiasts as being distinct from the one already well known as *Echinocereus papillosus*.

Distribution: known only from open mesquite woods, Linn, Hidalgo County, Texas (type locality).

Department of Botany, UNIVERSITY OF MICHIGAN.

Reprinted from RHODORA, Vol. 37, March, 1935.

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